

action is due to some change in the composition and structure of the organisms; that some change in the physiology of the organisms has been brought about. If we are correct in this supposition then it is easy to explain why stains can not be relied upon to differentiate toxin from nontoxin producers. If changes have been brought about which interfere with granule formations then, of course, no stain will be able to stain granules. It is certain that in mixed cultures with staphylococci diphtheria bacilli will stain as solid bacilli while in pure culture they are distinctly beaded.

Our observations of the influence of staphylococci on the staining of avirulent beaded bacilli indicate that in this case the beading may be more pronounced;

that is, the bacilli stain more solid, producing an effect which makes the organism more closely resemble what is usually accepted as good morphology for true diphtheria bacilli. The result is that even when the stain does bring out granules it can not be depended upon to differentiate toxin from nontoxin producers because of the influence of growth with staphylococci on the staining reaction of the bacilli.

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REPORT OF THE COMMITTEE OF THE STATE AND PROVINCIAL HEALTH AUTHORITIES ON RELATION OF MEDICAL MEN AND HEALTH OFFICIALS

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IN CONSIDERING the relation of medical men and health officials the following questions are encountered:

1. What is the field of medicine?
2. What is the field of public health?
3. Do these fields merge?
4. If merged what understanding and relation should be established between medical men and health officials with public welfare the controlling motive?

WHAT IS THE FIELD OF MEDICINE?

Medicine as it is practiced to-day by the rank and file of the medical profession concerns itself more especially with the diagnosis and treatment of diseases that have advanced to a stage where they incapacitate the afflicted and interfere with productive efficiency or the enjoyment of life. Most of these diseases occupying the time and thought of the

medical profession have reached what Sir James MacKenzie classifies as the "advanced stage" and many have approached the "final stage"; few diseases, relatively speaking, are treated by the profession in the "early stage," and fewer still in the "predisposing stage."

Nevertheless, it is true that the medical profession to-day is giving more treatment for diseases that are in the early stage and to patients who are predisposed than ever before. There is a strong, irresistible, unceasing current in medicine moving from the obviously pathological toward the more physiological conditions of life. This tendency of medicine to find its patient before irreparable damage has been done and to treat disease in its more curable stages has been made possible (1) by a larger appreciation on the part of both physician and patient of early

treatment as contrasted with late treatment, this larger appreciation of early treatment having resulted from the greater emphasis that has been placed upon disease prevention as compared with the treatment of disease during the last thirty or forty years; and (2) by easier means for reaching the patient because of (a) improved communication, telephones and roads, (b) improved transportation, automobile and electric car lines, and (c) enlarged hospital facilities with segregation of the sick.

In certain special fields of medicine this tendency of medical thought and practice to emigrate from the pathological into the physiological phases of vital conservation is well under way. Medical textbooks teach that pregnancy is a normal state of being, but medicine has taught for years that every pregnant woman is entitled to and should have medical care in order to anticipate, treat and prevent dangers which threaten the expectant mother and her child. Infancy is also a normal state of being, but a state of being of enfeebled vitality, and a condition of life where danger threatens even more than in normal pregnancy. The pediatricians in the more enlightened centers are now giving most of their time and thought to the care not of pathological infancy but of physiological infancy. Medicine is now beginning to recognize and admit that adult life, especially adult life after middle age, is sufficiently liable to dangers which may be anticipated and prevented to justify and require general periodic medical oversight. It is very clear, then, that the field of medicine is rapidly enlarging itself to include not only treatment of present diseases but anticipatory treatment of disease liability. Anticipatory treatment has for its motive and purpose prevention; it is prevention.

Prevention is much newer as a practice than as an ideal in medicine. Medical ideals, the larger objectives of the profession, have always been the prevention of disease. The pride of the profession, the respect in which the public holds it,

the distinction which it has over the cults, is that through its discoveries and their application smallpox and typhus and yellow fever have been banished and diseases in general have been greatly reduced; the efficiency and happiness of life and longevity have been definitely and measurably advanced. The "Principles of Medical Ethics," embodying a statement of principles and ideals of the organized medical profession of the United States, in chapter three, relating to the "Duties of the Profession to the Public" especially and urgently advises the members of the profession to take an active and advanced position in their communities, their states and their nation in proposing legislation for disease prevention, in supporting officers for the enforcement of such legislation, and in every possible way preventing disease in the interest of the public welfare.

To summarize, the field of medicine, in both its practice and its claims, insists and rightly insists on including within its activities both the cure and the prevention of disease, and the unmistakable tendency in medicine is to increase its work in the prevention of disease as compared with its work in the treatment of disease.

WHAT IS THE FIELD OF PUBLIC HEALTH?

Public health in its early years had as its main object disease prevention. Public health movements started usually as popular reactions against some particular disease epidemic and the primary idea in the minds of those originating and supporting the early efforts was to prevent a recurrence of an epidemic that had imposed a heavy toll in loss of life. With such an initial impulse the idea of disease prevention grew and expanded to include communicable disease control in general as we now understand it and involving: (1) quarantine, as the term is ordinarily understood, (2) segregation and hospitalization of communicable infection, (3) destruction of morbid agents, such as insect carriers (flies,

mosquitoes and lice) and food poisons, (4) control of public water supplies, (5) sanitary supervision of milk supplies, and (6) production and use of biological products, antitoxins and vaccines, in immunizing susceptible populations.

From such activities, relating more clearly to communicable disease control, it was an easy and necessary step to activities involving disease detection and treatment where treatment was a necessary end to prevention. In malaria, hookworm, trachoma, venereal disease and tuberculosis the treatment of the infected persons became an essential agency of prevention in order to forestall the transfer of infection to others. Such treatment is approved under a resolution adopted by the House of Delegates of the American Medical Association at the St. Louis meeting in 1922 and published in volume 78, page 1715, of the JOURNAL.

With these early efforts in disease control there developed an enlarged sense of responsibility for the protection of health and life against all of its liabilities including both anticipated and present danger. The public has as a result of this growing sense of responsibility for the protection of human life greatly increased its financial support of medical colleges, hospitals and diagnostic laboratories; furthermore the public has recognized through surveys made by private and official agencies the great unsupplied need for more adequate medical treatment, and health departments, reflecting this popular interest in more adequate general treatment of disease, have assumed a larger interest in arranging with the medical profession for the treatment of those diseases the prevalence of which constitute large social handicaps.

The development of public health, originating with the idea of prevention, has enlarged itself to include cure, just as medicine, beginning with cure, has grown in the reverse direction to include prevention, so that to-day we find the forces of prevention and cure met, intermingling, and in need of such under-

standing and organization as will establish a proper relation of the two forces.

DO THE FIELDS OF CURE AND PREVENTION MERGE?

The forces of medicine and public health cannot be separated along lines of cure and prevention, as neither medicine nor public health can afford to renounce its interest in either treatment or anticipated treatment. Cure and prevention merge by as imperceptible gradations as physiology becomes transformed into pathology, as the new leaf of spring fades into the seared yellow leaf of autumn.

The merged fields of cure and prevention cannot be occupied by two separate, disarticulated forces, one representing the idea of cure and the other of prevention. Separation of forces means lack of understanding, absence of coördination between workers whose tasks are much the same; it means friction and conflict with resulting harm to both medicine and public health. Combination of forces means understanding, coördination and increased efficiency for both branches of medicine. Another reason, one of necessity, which requires public health to join with the forces of medicine is the size of the forces of workers that public health would have to organize and train in order to encompass the vast problem of disease prevention and health promotion. One can get a quick, convincing view of the size of the force that public health would need to occupy simply the present field of untreated disease, by recalling the fact that the profession of medicine to-day is able to occupy about one-third or one-fifth of the field which in the interest of the public it should occupy. Public health must of necessity utilize the rank and file of the medical profession, the 150,000 doctors of this country, in performing the various items of work that enter into a public health program, or frankly and seriously consider a program of developing a separate and special force of from 150,000 to 200,000 workers.

The fields of cure and prevention are,

then, merged not only through the inseparableness of their problems, but under the necessity of being developed by a single well organized, coördinated force.

WHAT SHOULD BE THE UNDERSTANDING BETWEEN MEDICAL MEN AND HEALTH OFFICIALS WITH THE PUBLIC WELFARE THE CONTROLLING MOTIVE?

An understanding is necessary for the enlarged efficiency of both those who are engaged in private practice and those who are employed in public health. Such an understanding, when arrived at, will rest upon a division of labor. A proper division of labor will be predicated on the general principle that the members of the medical profession shall perform such items of public health service, both of a curative and a preventive character as their training and number make possible, for which they shall be paid a reasonable compensation, it being necessary to distinguish between rates for bulk work and individual case work, between wholesale and retail prices; and further, that health officials representing the public interest shall so organize and restrict their personnel as to provide for the medical profession rendering the aforementioned

service, the health officials devoting themselves largely to either the enforcement or repeal of public health laws, particularly quarantine, and to passing upon items of service for which payment is claimed which has been rendered by members of the medical profession.

Under this sort of an arrangement members of the medical profession would, wherever their numbers make such service possible, be employed in Schick testing, in immunizing against typhoid and diphtheria, in vaccinating against smallpox, in giving Pasteur treatments, in holding venereal disease dispensaries, in the detection and treatment of the common defects of public school children, in holding maternity and infant clinics and, especially, in doing much of the education work of local boards of health through which all these activities and others are made possible.

The health officer would become the representative of the public whose first duty would be to enforce health laws, and whose second and larger duty would be to serve as an organizer of such social and professional machinery as is necessary to bring about the largest possible reduction in morbidity and mortality rates.



CHILD HEALTH WORK IN PENNSYLVANIA

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THE present program for baby work in Pennsylvania has been in process of development for a period of four or five years. Starting with an open "field," "plowed" by the war-inspired interest in physical fitness, "harrowing" and "seed-sowing" had to be done, which is a figure for getting enough public interest aroused to start the infant and maternal welfare work. To sow the seed, the Child Health Division chiefs solicited places on the programs of the meetings of clubs and organizations of all sorts. Every possible invitation was accepted and within 18 months at least one talk had been

given in 58 counties of the state. In some instances, several trips and talks in single counties were made. Child-health centers were at the beginning few and far between. They were, and still are, the accepted best method for teaching mothers how to keep well babies well, and to "keep tab" on the physical condition of the children by recurring complete examinations at the hands of a physician with, also, regularly recurring visits for weighing and visé by the nurse. To date, July 15th, there are in the state 446 centers, 209 under state control; 237 under private, semi-private or community auspices.